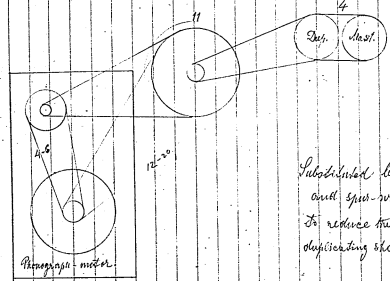
Notebook, N-05-08-15.2

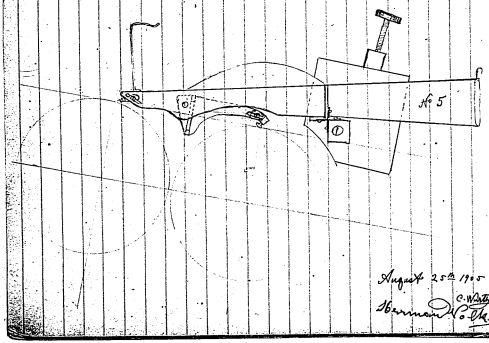
Room 18 S.O. # 1706

C. Wurth

August 15. 1905



Substituted belts for worms and spur-wheels —
To reduce the speed of the duplicating shaft to 4 p.m.

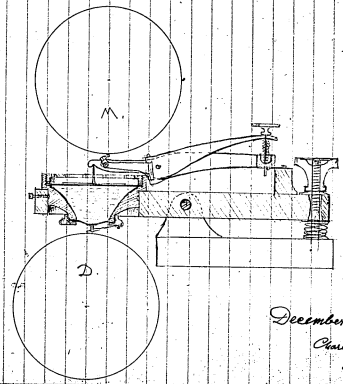


Август 25 дня 1905
С. Witte
Подпись Ю. Витте

C.W.C.
Sept. 22. 05

Oct. 1, 1905

C.W.
A.J.P.



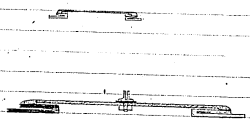
December 14th 1905

Charles A. Mitch

January 12th 1906

Make rubber-packing-rings more flexible.

C.W.



February 06.

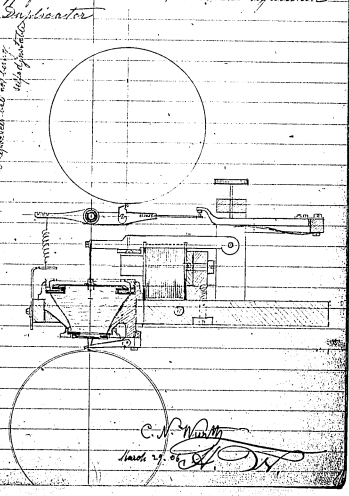
Prolong the life of masters by applying ice-water on the reproducer-ball for lubricating

C.W.

March 29th 1906.

Brough experiment with Electro-magnetic appliance in combination with hydraulic Oscillator

Not drawn enough! [illegible] [illegible]



C. N. Wright

March 29. 06

May 16. 06.

B. Diaphr. Drumhead skin 5/16 Diam. .08 thick
Horn #6. Stylus .010

B.1. Sound entrance in centre. rubber-cushions.
B.2. " " ⊙ cushion brassring 1/16 thick
B.3. " " ⊙⊙ " " "

June 1. 06

C. Diaphr. Parchement .008. Diam. 5/8"
Rec. Stylus .027. Rep. .025

C.1. Diaphr. top #2 ⊙ Diaphr. loose
~~C.2.~~ " " ~~3~~ ⊙ " ~~stretched tight~~
6/12 C.3 a & b. " " " " " loosened a little
C.3 c. " " 4 ⊙⊙ " "
C.4. a " " " 3 b quite loose 1/16 brass cushion
" b. " " " 1 ⊙ " " rubber cushion
C.5 " " 2 Diaphr. tightened slightly.
a. D. horn. b #6 hrn.
C.6 Diaphr. Banjo-head skin .07. hrn. #6.
a slightly loose, & b. stretched
C.7 id a Toy horn, b #6 horn. Very slightly stretched
C.8. Diaphr. Parchement .006 Steel stylus. stretched slightly
Diaph top #4

June 21st 1896

D. 1 Diaphr. Banjo-head skin .0075, 1,350" Diam.
Soundhole on one side I

Diaph. tight.

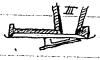
June 22.

D 2 a. The same with sound-hole at II

Soundhole II

D2. b. Sound hole at IV

D3 Soundhole III
a loose, b. Slightly tight.



D5 a. Toy-horn, b. #6 horn.
Soundhole #2 Stylus #385 Diaph. unstretched

D. 6. Horn #6 Soundhole in centre, Slightly tight.

D7 " Soundhole #II, more shallow
Diaph. stretched OK

D. 8 " " #2. a little loose } stylus fast low.
" 9 " " " stretched more
" 10 " " " a little loose stylus high
" 11 Stylus a little higher than 8 & 9.

June 27th 06.

E. 2 Diaphs. Celluloid .011 corrugated deep in centre, shallow towards circumference, ∴ soundhole of IV

a. #6 horn b. Toy-horn? N.G.

July 10. 06.

Diaphs of Tussonar-cloth and pine-wood 1 5/8" Diam with tightening arrangement and spring to pull up.

F. 1. Diaphs. and spring tight

2. Diaphs. a little loose, spring tight N.G.

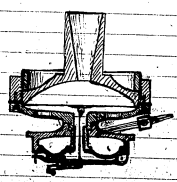
July 20. 06.

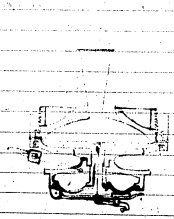
Speaker with air-cushion in place of weight

Diaphs. Banjo-head skin 1.550 (ins) Diameter

July 26. 06.

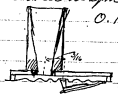
Replaced skin diaphs by 8.003 steel. reg. diam. O.K.





August 1. 06

Made recorder with .003 steel diaphr.
sound-hole Eccentric 3/16 O.K.



August 2d 06

Recorder with .003. steel-diaphr.
sound-hole Eccentric 3/8 O.K.
styles pastured on 3 legs

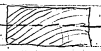
August 10. 06.

Automatic recorder with steel diaphr., .003
bellacked on both sides. not very loud

Automatic recorder with .001 nickel diaphr.
C.11. very sensitiv. blasts a little

Sound-hole 3/8 eccentric

August 17. 06. Automatic recorder
with diaphr. of soft white-pine, .013 thick
bellacked on both sides.
without rib across the grain of blasto
with rib has good tone, but less loud



C. 13.

1906

Sept. 10th to 24.
Took records on Pleasing-Tone in Room 13 (31)
with automatic Diaphs. .003 steel.
Rivers overture: F 1.
Sept. 15. Sent Shotom Recorder with 3rd Steel Diaphs. to W. Miller.
" 28. gave the arm of Shot. Rec. " "

Sept. 28. 1906.
Diaphragm of .006 Charcoal-iron
filed down to .004 towards the edge
Reflectholder a small post a little out of
centre of Diaphs. Reflns .010 O.K.

Oct. 10. & 11. Experiments with Five horns
" 17. 2 Larks. Sub. Diaphs. .003, Refl. .040. (same as Shotom)
large 54" black horn and split papers horn.
high notes good, bass weak.
Oct 17. Trad. Nightingale. C. 17. Diaphs of Drawbeat-Shot
with Shotom, large 44" paper horn.

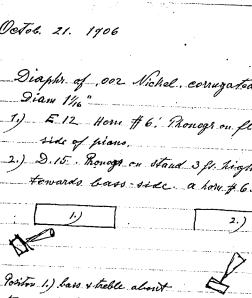
Oct. 19. Sent to W. Miller 2 = .010 Refl. 4 = .012 Refl.
1 = .015 " 1 = .010 Balls
2 = .030 "

Octob. 21. 1906

Diaphr. of nor Nickel corrugated, Stylus 35
Diam 1/16"

1.) E.12 Horn #6. Phonogr on floor on table-side of piano.

2.) D.15. Phonogr on stand 3 ft. high, pointed towards bass-side a horn #6. B horn #10 (no?)



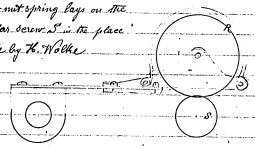
Position 1.) bass & treble almost the same intensity.

2.) treble notes much more penetrating.
No difference between 1/8 and 3/8 hole in diaphr-top.

Oct. 24 – 27. Diaphr. of telephone-carbon on regular size OK. 1/4" tone too thin & metallic.

Nov. 1–6. 06. Diaphr. of nor Nickel mounted in automatic & recording arm with leading ball reproduces. Diaphr. nor steel. Reproduces faintest dictation very clear. In commercial phonogr without leading ball there is too much scratch.

Novemb. 13. 06. Device for reproducing 100 thread records on Home-phonograph with 100 thread-screw. A Roller R mounted on the feed-nut spring lays on the regular screw S in the place. Made by H. Wolke



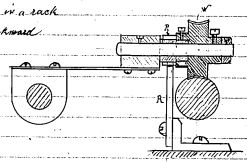
of the feed nut. On this roller is cut a left hand screw-thread 100 threads per inch. The diameter of this roller must be double that of the screw.

Explained to me November 17. 1906.
Franz L. Dyer
Franz L.

Novemb. 11 — 06.

Device for recording and reproducing 200 tracks records on Phonographs with the regular 100 screw.

A worm 3/4" Diam. with a pinion 3/4" D. engaging in a rack moves backward



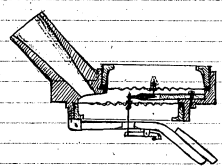
Invt. by C. Kinsley

A worm 3/4" Diam., a gear-wheel of exactly the same pitch-line Diam. 48 pitch 30 teeth; an idler of any convenient Diam. a rack with 4 x pitch moves forward 200 tev. per inch.

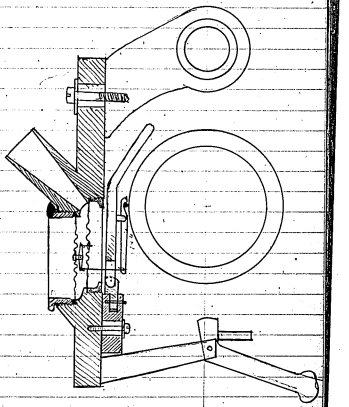
Dec. 1906 No. # 1887

Experimenting on multiple diaphragms for Reproducers.

Dec 6.

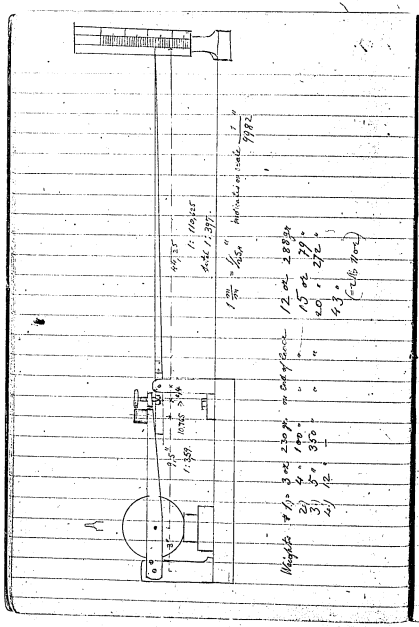


Dec. 31st 1906.



January 1907 to May 1907

Experiments on loud reproducers



1907. May-June S.O. # 1925

Hard-Wax Experiments

Regular black masters wax.

~~alone on weight~~

0	15.2 m/m on scale		Reg. Wx with 10 % Lamp-black ground in pt 2 lb.		
W. #3	23	at 9:30 AM	0 —	46 m/m on scale	
	24	" 31	W. #3.	9:47 AM	54
	25	" 32		48	55 ¼
	25.5	" 33		50	56.1
	25.75	" 34		52	56 ⅓
	26.25	" 40		9:57	57 ¼

17 % Lamp-black.			25 % Lamp-black		
(no weight) 0 —	28		0 —	28	
# 3 Weight 10.2 cd.	33 ½		W. 10 15 AM	35	
10.4	35 ¼		18	36 ¾	
10 6	35 ¾		20	37 ½	
12 12 AM	36 ¾		10 26	38 ⅔	

33 % Lampblack			50 % Lamp-black		
0 —	28		0 —	29 22/m	
W. 10 22 AM	34		with W. at 10 28 AM	35	
" 24	36		" 50	37	
" 36	36 ⅔		" 53	38 ¼	
10 22	37		" 58	39	
10 45	37 ¼		11 15	40	

June 10-11 '07

#7A) 66% dark Carnauba, Wax 12% light Carnauba 12% Lamp Black

0. 22 73° 0.-15

(1-3) W	27.5 (min)	4.28 (sec)	W & 3	16.25	4.42
	30.25	4.30		17 =	" 43
	31 =	" 32		17.25	" 45
	31.5	" 35		18	" 52
	32	" 38			

#8A 75.9% Light Carnauba, 15.8% White master Wx and 10.3% Prussian blue

73°

Weights #1 & 3.

0. 27.25 (min)

W. 1 & 3	37.5	5.10
	38	5.11
	38.25	5.12
	39.25	5.14
	39.75	5.16
	40.25	5.20
	41 =	5.22

#9A.) L. Carnauba 16. Sum Copal 17. P. Blue #1 Wx

Wx. not mix

N.G.

#10. N.G.

#11A Reg. Bee Wx 25%, Carnauba 50% Black 25%

N.G. Porous.

#12A Reg. Wx 25% Carnauba 50% Vienna lime 25%

N.G. Porous.

1) Stearic acid 10 drops Acetate of lead 2½ drops

2) St. ac. 8 drops Ac. iron 1 dif not hard

3) " 6 " " ½ " not hard

4) St. ac 8, Camauba 4, Ac iron 1

5) St. ac 8 Camauba 4

6.) " 8 " Ac. Tincture of iron 1

7.) 6 3 Arsenic ½ I, II, III

8.) " ratio " 3 " Aluminium 3 I II III

9 " 6 2 " 1½ no crystals

10 " 10 " 0 Acet. Aluminum 2½ I, II

11.) " 12 0 Zinc ½ I II

12 " 18 0 2 Acet Magnesia I II III

13.) " 4 " 1 mixed with # 13. II

14.) " 13 0 Acet. copper 3 I II

15.) " 8 0 " Lithium

16.) 20 " nickel 5

17 cobalt

18 Sep. × brittle. 7 I not hard but brittle

19

20 " 12 1 Acet Magnes. Acet Zinc

21) 20 Stearic Ac. 10 D. Camauba 2 Acet Magnes. Acet St. Ac. 8. Acet. Magn. first then add Cam. cracks in molding not very hard

22.) 16 St. Ac. 2 Acet. of Magnes. 1 Ac. of iron add # 16 reg. bee mast. Wh.

23.) St. Ac, Acet. Magnes, Ceresin, red gum

24.) Stearate of Magnesium × gum copal

25.) " " " Shellack

26.) 20 Stear. Ac. 3 Acet. Magnes. 6½ Shellack

27 10 " " 1 " ½ " "

28. 5 " ½ " " Gum Amber. (Will not dissolve)

29. " " " " " Gum Sandarac

30. 8 St. Acid (Acetic) 1 Acet. Magnes. Gum Damour

31.) " " " Gum arabic will not dissolve

32.) 10 Stearic 1½ Acet. Lead × Spirit Naphtha will not come of mold

June 21. 07

W.2 W 3 80°			80°		
# 27 - 0		19.75	# 13 - 0	=	17
+W. 10 - 24		27 -	10.55		43.5
" 25		29	56		46.5
" 26		30.5	57		47.75
" 27		31.25	58		48.5
" 28		31.25	59		49 -
" 30		32.50	11.01		50
" 32		33	3		50.3
" 36		34	7		51
W.	29	(5)	-W	46.75	(4.25)

Reg. M. Wh. with 17 % lamp black			Sh. of Barium		
0 -		25.75	0		21
+ W. 11.15		42.50	+ W 11.34		33
" 16		45 -	" 35		37.75
" 17		46.5	" 36		39.50
" 18		47.50	" 37		41.50
" 19		48 -	38		42.25
21		49 -	40		43.50
23		49.50	42		44.50
27		50.50	46		46 -
-W	44	(6.50)	-W	41.50	(4.50)

June 22. 07

(# 33.) Stearin 10. Acet. Lead 2. Shellac 2. Dam. Copal
(Dissolved) Dam copal will not dissolve.

34. Stearin No. 8. Acet. Lead 2. Shellac 2.

35 St. No. 8 Acet. Magnesia 1½ Shellac 3
(June 24) D. Carmabon 3.

(# 36.) St. No. 8 Acet. Magnesia 2 Shellac 1 Carmabon 1½
Hard but very brittle. sandy.

June 25 # 37 Stear. Acid 8 Acet. Cobalt 2 Very fogy

38 Stear. Acid 8 Acet. Cobalt 1½ Carmabon 1 Crocein 1

27) " 39. " " 8 " " 1½ Shellac 1½

40.) " " 8½ " " 1 " ½

41.) " " 8. " " Magnesia 1½ Acid 6 3. Shellac 1

28) 42.) 50% Reg. Wh. 50% Litharge, ground 2 hs

43.) 67% Reg. Wh. 33% Zinc-white
ground 2 hs

29) 44.) 67% Reg. Wh 33% Carbonate of Lead
Ground 3 hs.

July 45.)

June 24 07 78°	June 25. 90° partly in cold rust	90° in new yard.
# 25 0-17	# 25 0-8	# 25 0-18
" 11 2.2 11-38 31	+W 2.28 - 22	W 2.48 33
" 29 33	" 29 24.75	" 49 - 35
" 40 34	30 26	" 50 - 36
41 34.25	" 31 26.75	" 51 36.5
42 34.5	" 32 27.11	52 37
44 35.25	" 34 27.70	54 37.5
46 35.5	" 36 28.30	56 38 -
50 36 -	" 40 28.50	3 - 38.75
-W. 29.5 (6.5)	-W 22.25 (7.75)	-W 33.25 (6.50)

June 25. 91° Reg. black Hard.	Re. White hard. 91°
0. 15	0 - 17.5
+W 3.8 - 34	+W 3.29 36
" 9 - 42	" 30 39.5
" 10 - 44.25	" 31 41.25
" 11 - 46	" 32 42.25
12 - 46.5	" 33 43 -
13 47	" 34 42.25
15 48.25	" 36 44
20 50	41 45.25
-W 44.25 (5.75)	-W. 39.25 (6)

June 25. 91°	ϕ 27.) 74°	ϕ 27. 73°
# 36 0 - 8	# 37. 0-23.5	# 38 0 - 22.5
+W 1.6 22 (2×3)	W 9 - 0 35.5 (2×3)	+W 9.19 35.6 (2×3)
" 7 29.25	" 1 36.5	" 20 36.25
8 31	" 2 37	" 22 37.5
9 32.25	" 3 37.25	" 23 38
10 33	" 4 37.5	" 24 38.25
12 34	" 6 38	" 26 38.70
14 35	" 8 38.2	" 28 39.5
18 36.5	" 12 39	" 31 39.5
- W 30.75 (5.75)	-W 32 (6.5)	-W 33.5 (6)

June 27. 73° July 2	# 30. 810	90 5PM
Reg Black 0-25.5	0 - 19	
+W 9 48 36.5	11.42. 32	
49 - 39.	" 43 36	
50 - 39.75	44 37	
51 - 40.50	46 39	
52 41.	49 41	
54 41.3	54 42.25	
56 42.75	-W 36.5	
10 - - 42.5	(5.75)	
- W 36 (6.5)		

July 1st 07.
77°

# 42) 0 - 28.5	#43) 0 - 6.5	#49) 0 - 8 12.5
+ W 9.29 18	W 9.41 34	W 10-2 - 28
- 30 51.5	- 45 37	- 5 - 30.5
- 32 54	- 48 40	- 7 - 31
- 35 52.5	- 51 41.5	10 31.5
- 41 53	- 56 42.5	- 16 32
- W 46 (7)	- W 36.5 (6)	- W 34 (8)

Dust on Crushed Light

#43 0 - 20
+ W. 10-21 - 31.5
- 22 - 42
24 - 44
28 45.5
33 46
- W 41 (8)

79°

July 2. 86°

# 46	0 - 12	#45)	0 23
11. 3 -	29	11 - 19	36
4	34.5	20	38
7	40.5	22	39
10	43	25	39.25
15	45.5	31	40
- W 38.5	(7)	- W 32	(8)

87°

July 1. 1907

45.) Stearic Acid 9% Acet. Nickel 2

46.) " " 9% Acet. Nickel 2 Rouge 3
Reg. Bl. Wh. 5 L. Carmine 1%

47.) " " 9% Acet Nickel 2. White-lead 9
L Canaw 2

48.) " " 9% Acet Nickel 1 Ac. Iron 1 ~~D. Carmine 2~~
#15 Deabl 5 White lead 4

49.) Stearic Acid Acetate copper 1% acet. magnes. 1 Carmine 2
~~Rouge~~ Paraffine 1% Ebonit 3

50.) 20 Reg. Wh. 5 hard soap. 2. D. Carmine 2 Ebonit
N.Y. Soft & sticky.

51.) Stearic Ac. 9% Acet Magnes. 1 Acet. Copper 1% Carmine
L Carmine 1 #15 D. 1%
Cracked in microtomes

July 5. 78°

# 47)	0 - 18	#48 -	0 - 21
+ W.	9 - 12	+ W.	9 - 34
	18 - 36		- 1 54
	14 - 36.5		- 2 61
	16 - 36.5		- 4 67
	20 - 36.75		- 6 69
	24 - 37		- 9 71
- W	27.2 (7)	- W	64 (7)

July 11.

52. # 51 - 6 dr. in d. Carnauba 1. Ebonite 1/2

53.) # 8 dr. 12 drs. 1 d. Carnauba 1. Paraffine

54) Sp. Gr. No. 11, Sect. Potasse 3 Carnauba 2 1/2
Hell Kill Paraf. 11 Ebonit 1/2 add 4 Pt. Acid Stearic.

55. Sp. Gr. No. 10 Bromide of Potas 3
July 28-24 Will not dissolve.

56. Spinnerette # 535

57. " Reamer-Chips
a Blade to mould } mould & core hot
2 " "
III mould hot, ring & core not very hot

56. I. II. Wk medium hot. mould hot. core & ring not very hot
III Wk hot, mould hot core & ring medium hot, chilled
IV Mould not so very hot. Wk lively flow Steady.
mould not at. dropped into water
V. Wk just flows a little more freely. Mould hot chilled quick
VI heated Wk to foaming and let cool down

57. Shaved # 5 off thinnest end. I ran over 5 min with heavy weight
reproduces 180 Rev. p. M.

57. 230 Rev. I) heavier weight, II 2 light weights III regular weight
2 min 3 m. 2 m.

July 25 86° - 90°.

Wearing tests July 16. 07 79°
180 Rev. p. Min

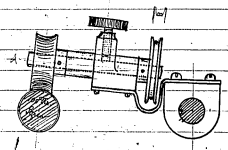
52. 1 min 2 min.
Reg. 1 1/2, 2
53. 1/2 1. 2

56 III Shaved. 240 Rev. 3 min reg. Repeated July 25 90°
56 I "
56 II Not shaved. ran 3 m. at 230 Rev. reg. Repeat. not scattered
56 V " " 3 " " 240 " heavy weight # 2 steel
After pressing in Water 140° F 225 Stone pt.
56 VI 3 min 232 Rev. scattered, after cooling in ice water -
56 V not shaved. ran 3 m at 232 Rev. (I before, II after pressing)
57 V Shaved after pressing ran 3 m. at 232

July 29 th # 5 Aug. 12 - 07
Experimented with Nothing recorded on
new shaved blades box from Sylvanette
N. G.

Aug 13th to Aug. 17th 07

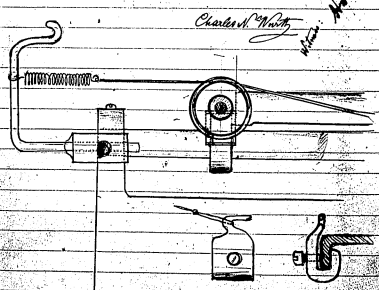
Made 200 thread feed on Reg. Home Bonger with 100 tho. screw. P.O. 1945



August 17th 1907

Charles A. Wright

Witness Norman Ostlie

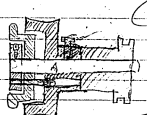


Aug 18th to Sept 17. 07

Experimented with worm wheels and compound gears for 200 tho. feed.

See sketches on last pages of this book

N. G.



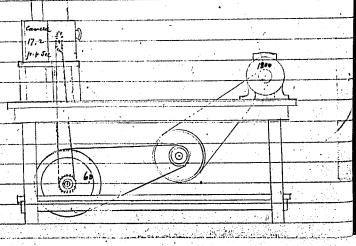
Impossible

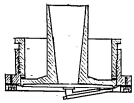
S.O. # 1956.

Sept. 17th. 07.

Experimenting with the Kineto-Phone.

To connect the camera and the recording phonograph by a long shaft, sprockets + chains.
The projecting machine and the reproducing phonograph to be connected likewise by an identical shaft, sprockets + chains.
With this arrangement absolute synchronism will be obtained.
An Electric motor to drive the shaft.
To obtain uniform speed a heavy flywheel is mounted on the shaft. A governor is also connected with the shaft.





Diaphragm-holder for flexible diaphragms*) and appliance for stretching the same to the required tension for producing**) an improved sound-record

*) such as Banjo-head-skin, parchement, tissues etc.

**) and reproducing

Orange N.J. June 25 th 1906

Charles N. Wurts

Explained to me June 25.1906 Thomas L. Fox

4
11
13
25
1

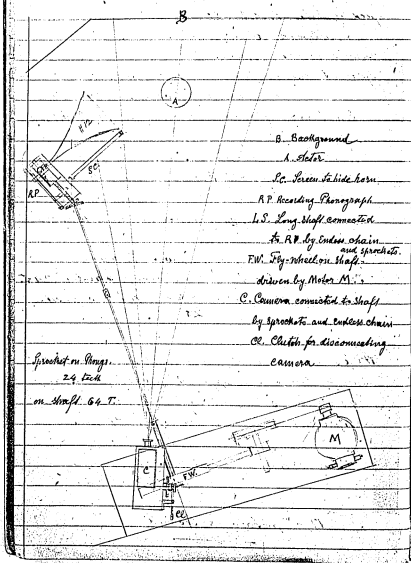
Speed of Motor 1700 to 1800 rev. p. m.
Flywheel 60 rev. p. m.
Camera makes 21 pictures to 1 turn of crank.
Sprocket-wheel on flywheelshaft for camera 16 teeth
" " on crankshaft of camera 20 teeth
On turn of flywheel makes $\frac{21 \times 16}{20} = 16.8$ pict p. sec.

On Projecting-machine, one turn of crank makes 16 pictures. Sprocket wheel on flywheelshaft 21 teeth
" " " crankshaft 20 teeth
On turn of flywheel makes $\frac{21 \times 16}{20} = 16.8$ p. p. sec.

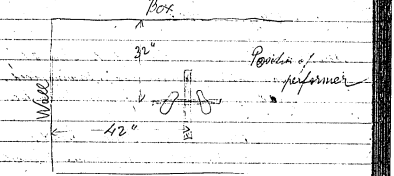
Sprocket-wheel on flywheelshaft to disc
Phonograph 64 teeth, on Phonogr. mandril 24 t.
Speed of Phonogr. $\frac{60 \times 64}{24} = 160$ Rev. p. m.

For a camera, which makes 21 pictures in one turn of the crankshaft, the projecting machine has to be geared up differently, as:
Sprocket-wheel on flywheelshaft 21 teeth
" on intermediate 20 "
Gear-wheel on intermediate 86 teeth
instead of 84

17, 2 pictures per second



B. Background
A. Actor
S.C. Screen to hide horn
A.P. Recording Phonograph
L.S. Long Shaft connected to R.P. by endless chain and sprockets.
F.W. Fly-wheel on Shaft driven by Motor M.
C. Camera connected to Shaft by sprockets and endless chain
CL. Clutch for disconnecting camera



Manner of Proceding for taking picture & record

The actor takes his position, the camera is focussed and film inserted, blanc cylinder placed on Phonograph and recorder arm let down, stylus 3/4" on blanc from edge of cyl. Then the motor is started and lights turned on. The camera is set in motion by clutch, the actor gives a signal with a mallet or other suitable instrument in such a manner that it can easily be seen on the film afterwards and heard on the Phonogr. After the signal the actor pauses 2 or 3 seconds before starting the performance. The camera is stopped by throwing out the clutch 2 or 3 seconds after the actor has finished.

In reproducing the film is set in the projector, much as closely as possible to the signal and the Phonograph also to the starting point of the signal, the arm being lifted by the ear and the motor started.

May 1908.

First Trial. Picture record # 1. Film # 1.
Pirman nailing packing box in sawing wood.
Speed on flywheel 60 Rev. p. m. Phonog. 160
p/m

Film # 2. Same subject.
to be used with P. Rec. # 1. (Pirman Box-nailing)

P. Rec. # 3. — Film # 3. June 12 08
Pirman Cut picture, singing Twas Love in Dixie Carina
Speed of Flywheel 96., film 27 pict. p. sec. Phonogr. 230

June 16. 08. P. Rec. # 4. Film # 4 (negative)
Same subject; Speed of Flywheel 60 Phonogr. 160. (127)
Film spoiled by not turning on the el. light.
Only bright daylight at 1.20 P.M.

June 18. P.R. # 5 Experiment. Short film. Speed 60. 160.

P.R. # 6. Pirmans song. Iris born in
Length ok

June 23d P.R. # 7. Meckers Song. Pattering Song.
Length ok. Alignment between
Tremble about pitch, caused the two cases
by thinning of the motor

P.R. # 8.

July 11. 08 Mr. Benzler with Xylophone

Distance of Xyl. fr. horn: treble ca 18" bass ca 60
Centre of horn ca 6" above Xyl.
horn used for # 5. 6. 7. x 8 = 12½" papier-maché with
tin extension to whole length of 30"

Received pos. print P.R. # 8 July 16th 132 ft.

Absolutely perfect display of this film & record
witnessed by Mr. Edison and Mr. Dyer July 17th 08.

Reproduced

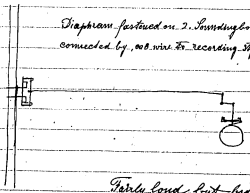
With same arrangement of shaft, projecting machine and reproducing
Phonograph as for taking camera, recording Phonogr. etc.

August 21. 1908.

Experiments with taking Piano-records by means of a stretched wire of .08 diam.

Recording stylus connected directly to 2. Sounding board through a stiff brass wire

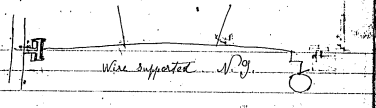
N.G. Very faint.



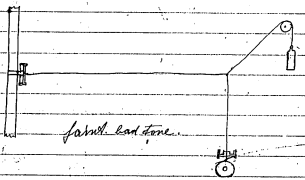
Diaphram fastened on 2. Sounding board and connected by .08 wire to recording stylus

Fairly loud but bad wiry tone

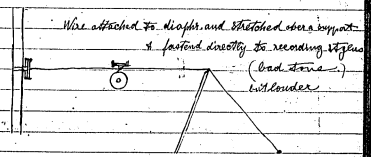
N.G.



Recording Phonograph with sliding arbor

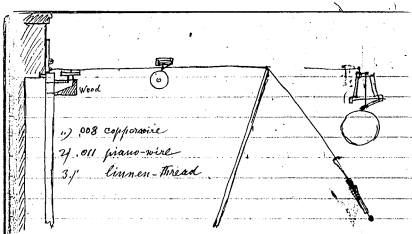


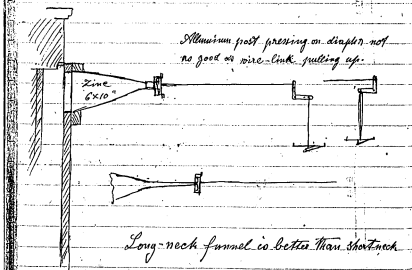
fairly bad tone.



Wire attached to diaphr. and stretched over a support & fastened directly to recording stylus (bad tone.) v. louder

Silk thread instead of wire: very faint.



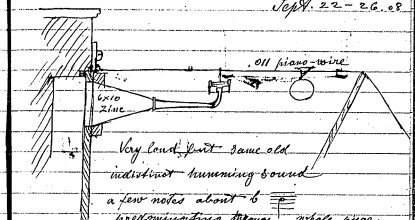


Aluminum post pressing on diaphr not so good as wire link pulling up.

Long-neck funnel is better than short-neck

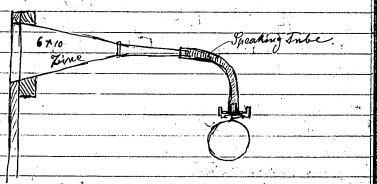
Record louder but indistinct.

Sept. 22-26. 08

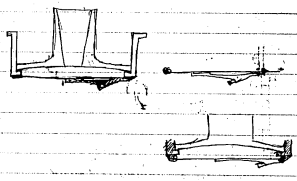


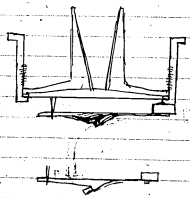
Very loud, but same old indistinct humming sound

a few notes about b predominating throughout whole piece.



Comes out much louder than played but blasts too much





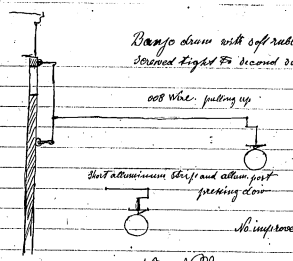
Oct. 7. 08

H. Wolfe
C. Wurth

Quite loud
Clear natural tone

Banjo drum with soft rubber cushion
screwed tight to second sounding board

Oct. 8. 08

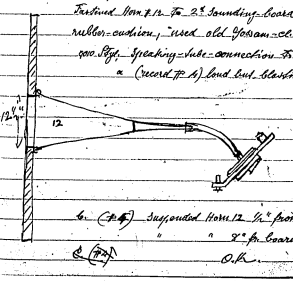


No improvement

Wire No. 99.

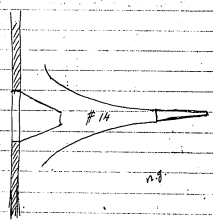
Oct. 12

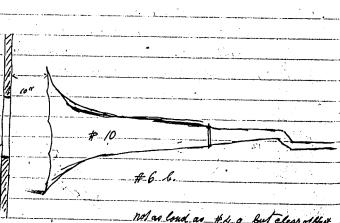
Exp. with 320 Th.
Fastened Horn # 12 to 2d sounding board with rubber cushion, used old Yokam-cl. diaphr.
2010 Rgt. speaking tube connection to diaphr.
" (record # 1) loud but blasting.



6 (# 4) suspended Horn 12 1/2" from sbord
" " 8" fr board
O.K.

Nov. 13. 08.





Not as loud as #4 a but clear of blur

#4 a. best tone

November 1908.

Experimenting with 8 mm (1 mm) 200 ltr. records in connection with Berman Air-pressure Speaker

First spring-motor made by J. O. Lund (?) for air-pump 60 rev. p.m. without being connected with Speaker.
It takes 1/16 H.P. (.0587). To work (?) J.O. air pump 150 rev. p.m. which is just right to produce a fairly loud reproduction with P. Speaker.
First J.O. Spring motor has only 1/6 to 1/8 of the power necessary for P. speaker.

Berman air-pump (1 cyl. 1" diam. - 1" stroke) requires a 1/32 HP - 110 V dir. cur. motor .9 Amp to run the required 200 rev. p.m.
1/16 H.P. motor with .9 amp. 110 V. = 68 V. - .33 amp.
= 23 watts = 1/32 H.P.

or:

2 cells of Chl. Accumul. in serie with M. Phonogr. motor, driving pully .930" driven 1.720" (at centre of sound belt p.120).
= 4.33 Amp. x 3.8 V. = 16.45 Watts = 1/45 (.022) HP

(Checked by Holland)
Nov. 20. 08. removed governor-belt.

December 22nd 08

Motor of Business-Phonograph on 8" 200 Ths Pump.
same motor on Romans pump; universal resistance
one 16 c.p. lamp between the governor-contact-ops.
The pump-motor alone takes, 430 Amp. 113 V = 48.59 W.
both motors together, 700 Amp - 113 V. = 79.1 Watts
Phonogr-motor, 270 Amp. 113 V = 30,51 Watts.

January 5. 1909

John Otto air compressor; 4 cylinders 1.20 Diam
1st stroke, with cork-valves,
Pump-motor alone absorbs, 473 Amp. 117 V = 55 W.
with pump at 180 Rev. 501 - 117 V = 58,7 "

Phonograph-motor alone, 280 Amp. 117 V 32 W.
with Phonogr. the same
The both together ca. 90 W.

The Phonogr. motor runs faster alone than when connected with the Phonogr, the difference of the speed indicates the amount of power required for the Phonogr.

John Otto & Romans pumps must take the same amount of current in order to give the same pressure.

January 6. 1909.

The W. Phonograph-motor with one cell of Chloride accumulators takes 2,6 Amp. 1,92 V = 4 Watts
To run the 8" 2 3/16" Phonograph at the Rev. prob.

January 18. 09

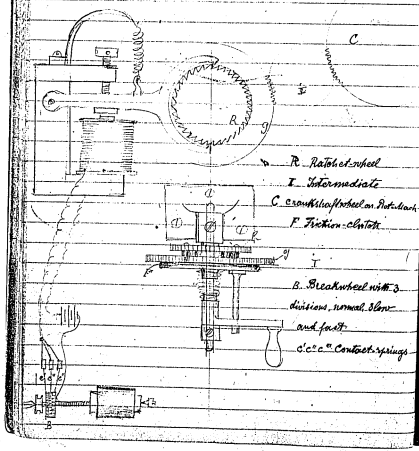
Replaced air-bottle by a cylinder (concrete-mould) covered on one side with three thicknesses of .023 sheet rubber; no difference.

February to April 10. 09

Experimented with different horns motors; air-pressure, tubes etc. for Romans speaker

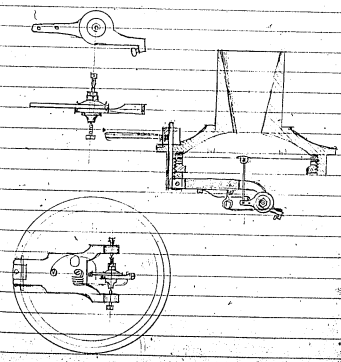
April 12. 1907.

Experiment work for Mr. Dyer #2066.
Synchronizing arrangement for Phonograph and Motive-machine.



May 13. 07. Received one positive print of P.R. # 7 (Mechr.) for S.O. proc.

June 14. 07. Make Reproduced with compound Rep.-ball-lever, held together by friction



July 16. 09.

Make Reproducer with Rep. ball lever swinging around centre of Diaphragm instead of hinge on edge.

Weights of Diaphragms in milligrammes, reg. Diam.

Mica 4 thick's of	.002 each	27.8
Cork	.080	308
White Celluloid	.0065	201
Reg. Copper	.0025	578
Hard rubber	.0065	185
Aluminum	.005	297

November 23rd to Dec. 17. 1909

Make pressed duplicates of wax & celluloid for leg dept.

Dec 1. Blanc of hard 4 min master-wax
Length of mold 4.125.
Diam. 2. 181 – 2.197 Taper No
Length of blanc 4.260
Diam. 2.180. – 2.196
Temp in core 113°, in tank 124°. 25 min.
Small end not pressed out full, large end nearly full.

Dec 2. Mold Expanded to 2.190 – 2.198
blanc 4.253, 2.192 – 199
Temp. in tank 135
" core 125 to 130
time of exposure 35 min.
Time for cooling in open air at 5°C. ½ hour.
blanc was slightly too large

3. 4.252, 2.191 – 2.198. 124° in core 130 in tank
Exposed 30 min. OK.

Dec. 20th 1909 to Jan 1910

Made scales for weighing Speaker-Weights.

Adjusted Jewellers Scale and made a set of extra weights: 2-1/8 oz 2-1/16, 2-1/4, 1-1 oz 1-2 oz.

Made one auxiliary scale for ~~marking~~ marking Division on dials.

January 1910 to February 8.

Made two scales for weighing reproducer-weights, One for regular inclined arm, one for level arm. Mounted on Sleeve to go on ~~Prem~~ arbor, a spiral spring to lift up a lever, which lifts the weight. The pin, which bears and works the spiral spring also bears the index-hand, which shows the weight on a dial.

1910.

February to March 22. With interruptions.
for Lamp Experim.
Made four scales for weighing Reproducer weights
as suggested by Mr. Edison. Dec. 20. 09.

March 23. 1910

Finished arrangement for gauging different kinds of blowers.

1910

March 25 to April 2.

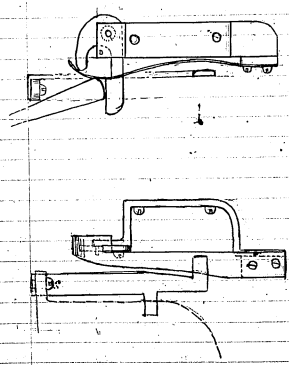
Made improvements on apparatus for removing wax-chips from master-records under the microscope; for Mould Department.

April 2 to 30.

Worked on blower-tests, record-cleaners etc. etc. etc.

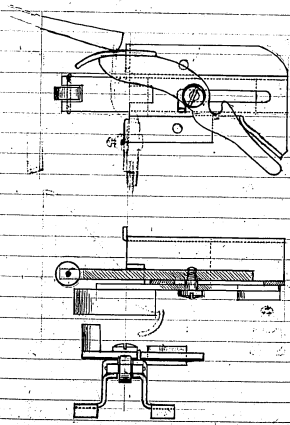
May 2. to 7th 1910.

Automatic Switch for Business Phonograph.
(Made 5-14.)
My scheme: finished May 16.



May 17. to June 2d

Improved M. Schaffels model of automatic switch for Business Phonograph and made a working model.

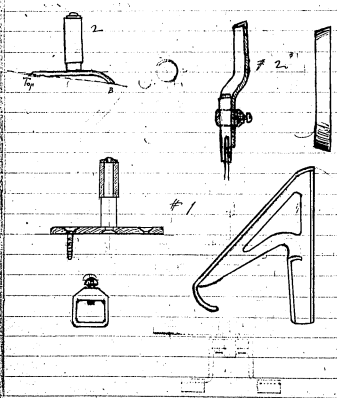


June 6th 1910.

Automatic Stop for Brains Phonograph

#1 flat. #2 off set

To be clamped onto Switch-door.



June 7th to July 7th 1910
Laid up with Gout.

July 17. 1910

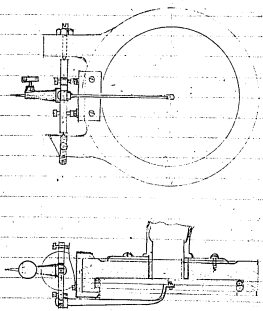
Started on improvements experiments on Moving-picture-machines
By order of Mr. Shoppe.

July 13. to laid up with gout.

July 20. Put off experiment till apparatus are finished

July 20. 1910.

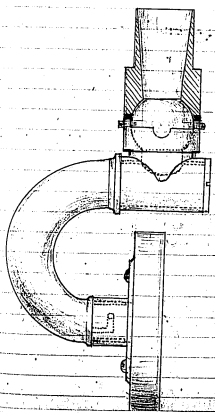
Make Disc-reproducer for Side-ways-cut-record.
By order of A. H.



1910.

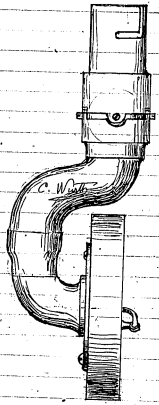
August – September –

Made corrections for using Victor-discs on new Edison Disc-Machine



1910

Sept. 13.



[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]

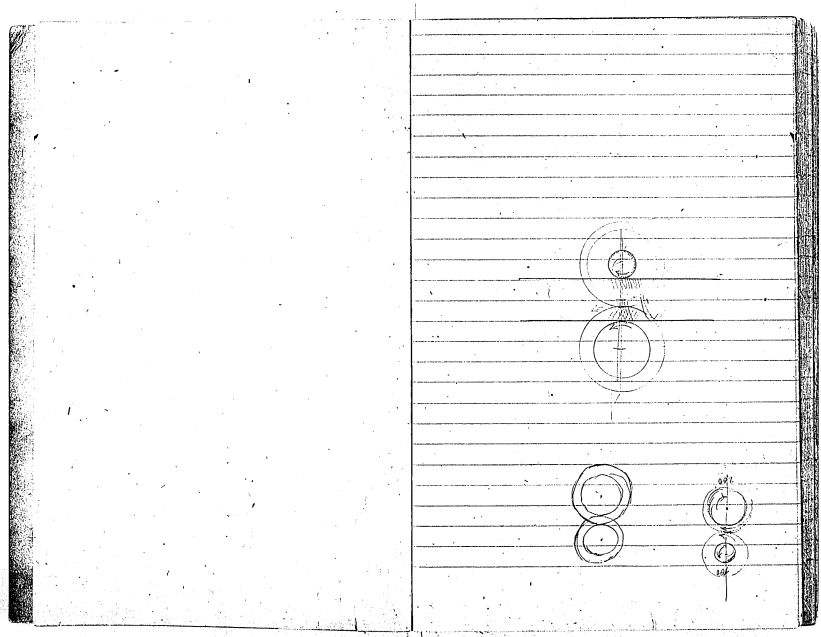
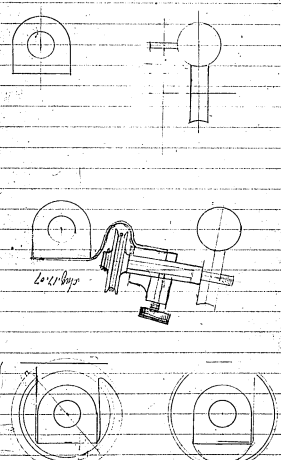
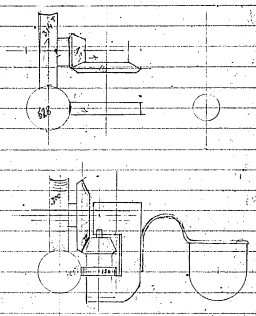


Fig. 29 a 29 b



1945 Aug. 24 07 C.W.

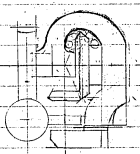


96.6
48.3

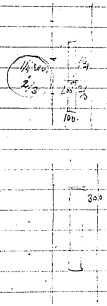
$.09/24 95.54
2824
1740
1500
1300
1300

Aug. 27 th 07

C.W.



504
152



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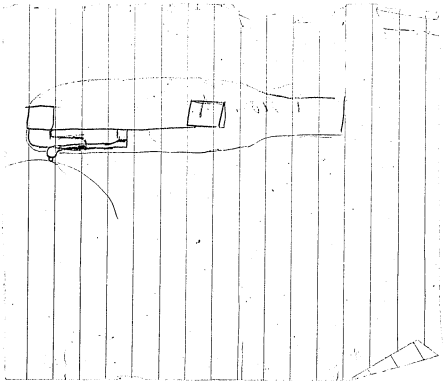

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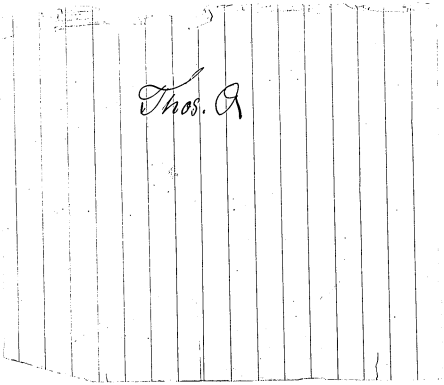

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M. Victor Ethienne Prétot, mechanic, living in Paris, 10 Rue des Immeubles industriels, has appeared before M. Adrien Cachard, ~~[illegible]~~ and his colleague, the undersigned notaries in Paris.

(ok) (Prétot) has by these presents designated as his attorney M. Charles Wurth, mechanic, living in Cambria, near Philadelphia, 10 York Street (United States of North America).

To whom (Wurth) he gives the power for him and in his name to:

Develope in the United States of America and particularly in Philadelphia, according to the conditions which the attorney will take notice; the patent which was awarded to him in France on the twenty fifth day of February, one thousand eight hundred and eighty nine under the number 140655 for the invention of a machine to clean knives, as well as other patents which the principall might obtain.

To take out all patents of improvement et certificates of addition, to change them or withdraw them if that should take place.

In consequence to provide to any competent authority, all demands, petitions et requests, to provide to all officers and officers ministerials and commissions which may be necessary, to sign and approve all descriptive articles, to require all verbal warrants, to contract all engagements, to change or withdraw all taxes.

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To sell and to cede to persons according to the price, the charges, conditions which the attorney will judge convenient, the aforesaid patents, patent of improvement, certificate of addition. to they ~~[illegible]~~ permanent or for a determined period of time — to receive the price for the said sales and cessions as well as all other sums which might arise from the exploitation of the said patents.

In case of the failure of any debtor, to take part in all deliberative meetings of creditors, to name all representatives, to make temporary or permanent, to sign all agreements, contracts, or [illegible], and if any one refuses to produce all titles and deeds, to affirm the sincerity of the credit of the principal, to contest or adjust that of the creditors, to make all remittals and to receive all dividends.

In case of whatever difficulties there may arise and in default of payments

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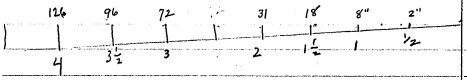

(4 ft up-mirror) 1/2 mile periscope up 4 ft, just see top-
periscope can see ship silhouette, 28 ft-

~~4 ft mirror, see periscopi, 4 ft up see 8" of ft~~
Periscope sees 20.4 of ship

4 ft mirror 1 1/2 mile - see 1 1/2 ft of periscope - Sub
sees-

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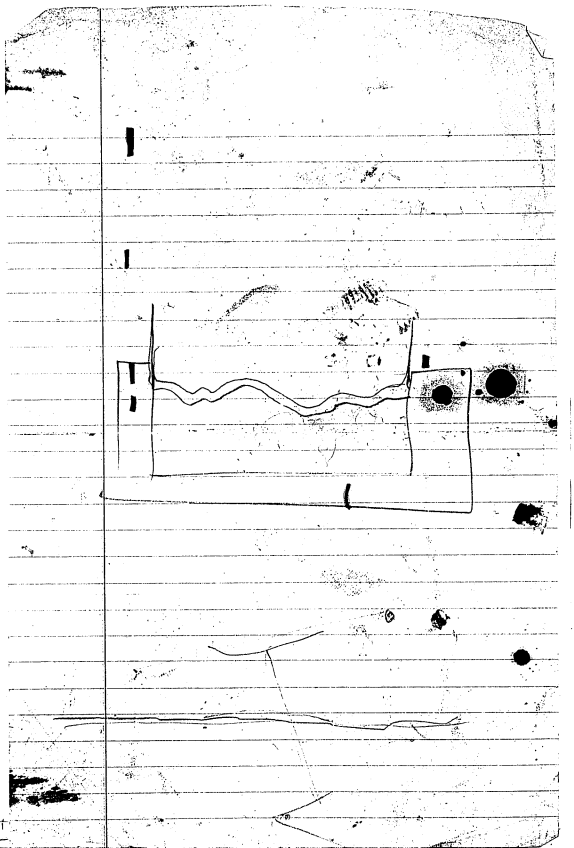

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CYLINDER RECORD MFG. BUSINESS

OFFICE OF DIVISION MANAGER

March 22, 1920.

Mr. A. Wurth, Supt.
Cylinder Record Mfg. Division

Effective Monday, March 22nd, and until further notice the following temporary rate will apply to the Reaming Operation:

This rate will be subject to withdrawal or revision at any time when, in the opinion of the management, it has not accomplished the desired results.

Starting Rate: Operators will be engaged at 45¢ per hour and rated at that figure until such time as they qualify for piece work. This period should not be over one week.

Qualifying for Piece Work: When one operator has reached an output of 80 boxes in 8 hours and a not o.k. production of not less than 96%.

Base Rate: $.13 per 100 records reamed.

Cooperative or Differential Rate: When the net o. k. production for the entire reaming force reaches 97% the rate is automatically adjusted to $.135 per 100 units; 98% $.145 per 100 units and 99% $.155 per 100 units. The individual earning will, of course, be based upon the individual production.

Advantages: The earnings of the entire force will not be affected by one of two slow operators or absentees - quality only will increase or decrease the rate.

One or two operators producing 70 or 80 percent o.k. work will reduce the earnings per 100 units of the entire crew.

Foreman participating on the same percentage basis, figured over a period of a week, will exercise closer supervision and eliminate poor operators.

Limitations and Penalties: The production per operator should be limited to 110 boxes per day. This to be accomplished by number of operators rather than by limiting the number of boxes delivered to each operator.

[ITEM FOUND IN BOOK]

Mr. A. Wurth, -2

Method of Computing: In arriving at the percentage figure the over and under-gauge and eccentric records at gauging will be used as the base. Operators will not be penalized by discards over which they have no control.

Earnings: The attached example will serve to show how this will effect an operator's earnings.

The foreman's earnings increasing at the same percentage ratio based on the average for the week will be as follows: Base $29.00. 97% week $30.15. 98%, $32.50 - 99%, $35.00.

To encourage the highest possible quality this rate should be explained to each operator and it would no doubt be advisable to post in the reaming room the prevailing rate for the week and day previous.

W. E. Sanborn
WES.
Division Manager.